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Using the dip slope and direction thus ascertained as a reference, points ~~were~~ ~~set~~ on units outside the Sphinx precinct were surveyed ~~to~~ and analyzed with respect ~~known~~ to points on known units in the Sphinx precinct to check for correspondence to the dip slope and direction.

SURVEY DATA RELEVANT TO THE GEOLOGICAL STRATIGRAPHY OF THE GIZA PLATEAU

1. **AIM** To identify ~~outcroppings of or exposures~~ of ~~bedrock~~ geologic units with reference to a ~~st~~ the designated "standard sequence" at the Sphinx precinct on the basis of correspondence to slope and direction of dip.

2. **PROCEDURE** An attempt was made to determine the true slope angle and direction of dip for ~~wat~~ Members I and II ~~in the Sphinx ditch~~ (as designated by Gauri in 1980) in the Sphinx ditch. This was done on the basis of secure points marking 1. ~~a given~~ the ~~interface betw~~ contact plane between Members I and II; and 2. a given unit in Member II (Bed 3a). set by Gauri in 1980 and ~~mapped~~ recorded in (vertical) section and plan by Lehner.

3. REFERENCE SLOPE ANGLE AND DIRECTION OF DIP

3.1. **MEMBER II DIP**

During the 1980 field season 11 points were monumented in the vertical bedrock exposures forming the W and S sides of the Sphinx ditch along a "brown line" in ~~Bed~~ Bed 3i (or between Beds 3a-b in Aigner's "Sphinx Sequence"). It was felt this was representative of the dip of Member II in general.

The position of Each point (G1, 3, 6, 7, 10, 12, 15, 16, 18, 19) was ~~triang.~~ surveyed by triangulation from the survey grid, and ~~its~~ the elevations of each point ~~was~~ was determined.* Sea Level From this data, the contour intervals of this unit were reconstructed by interpolation from the several points. In drawing the contour lines, the ~~fl~~ run or lie of the individual values, (eg. interval 17.0, 17.5, 18.0) as given by the interpolation was strictly adhered to.

Between the highest point monumented, G1 in the NW corner of the Sphinx "amphitheater," and the lowest point,

G16 in the far SE corner of the Sphinx sanctuary, there ~~is~~ is a distance of 136.85 ms and a difference in height of 14.21 ms. This gives a dip of ~~5°~~ 5° 55′ 41.″ At the same time, an average dip of 5° 06′ 08″ is obtained from ~~an~~ the following data:

1. G1 – G16
   Distance: 136.85 ms.
   Diffence in height 14.21 ms
   ~~Dip~~ slope: 5° 55′ 41″

2. G19 – G16
   Distance: 38. 55 ms
   D.f. hei.: 3.72 ms
   Slope 5° 30′ 42″

3. G18 – G16
   Distance 43.55 ms
   D.f. hei: 4.0 ms.
   Slope: 5° 14′ 52″

4. G7 – G16
   Distance 74.70
   D.f hei 5.43
   Slope 4° 69′ 27″

Average slope 5° 06′ 08″
Truest dip (?) G1 – G16 5° 55′ 41″

An attempt was made to determine the true bearing or direction of the dip on the basis of the contour lines obtained through interpolation. A protractor was placed over ~~ϕ~~ individual contour lines to arrive at the best possible perpendicular to that contour line. Since the lines are not absolutely even, or ~~[illegible]~~ this had to be an approximation. The best possible perpendicular was taken from five contour lines:

True North Bearing of Grid *   Rounded off to nearest .5 degree

Contour line	Bearing of Perpendicular*	Average Bearing
13.5	N 37° 16' W	
15.0	N 32° 16' W	N 30° 10' W
17.0	N 27° 46' W	ADD STRIKE
19.0	N 26° 46' W	
22.0	N 26° 46' W	

At the same time, the line ~~of~~ from G1 to G16, which gives greatest dip, has a bearing of:

N 44° 30' W

The ~~average and dip~~ bearing of the dip and strike obtained by averaging, and that from G1 – G16 have both been plotted on the general map.

3.2. CONTACT PLANE MEMBERS I AND II DIP.

~~As~~ The same procedure was followed in determining the dip, and its bearing, of the contact between Members I and II (or the sedimentary surface of Member I).

In the 1980 field season, Dr. Gawri selected 8 points at the surface of Member I (G2, 4, 8, 9, 11, 13, 17, 20). Each point's position and height elevation

were determined. The ~~con~~ reconstructed contours ~~lines~~ of this ~~sediment~~ sedimentary surface were interpolated from more than these eight points. It was determined that the undulating bedrock surface flanking the north side of the rock-cut Sphinx ditch and passing to the modern road embankment is this sedimentary surface, or contact plane between Members I and II. It has been laid bare by the ancient ~~method of~~ quarrying away of Member II. The bottom sub-unit of Member II is a soft marly limestone (Bed 2a). This allowed the ancients to clear away Member II without appreciably altering the natural sedimentary surface of Member ~~#~~ I — that is they followed the depositional plane (not unlike stratigraphic excavation in archaeology). For the topographical map of the Sphinx precinct, this open area was contoured on the basis of spot heights every 5 sq. ms ~~over much of this area~~ corresponding to the survey grid over much of this area. Any of these points could then be used, [with those marked in the cuts through Members I and II] for interpolating the contours of Member I-II contact plane where Member I surface had been cut ~~into~~ away to make the Sphinx ditch. This made for a denser cluster of ~~pon~~ interpolated points upon which the contours were strictly drawn, perhaps to a higher resolution than those of Member II.

Predictably, the contours render a more irregular plane than that of Member II's dip. This is not due exclusively to the higher resolution of the reconstructed contours but mainly to the fact that the sedimentary surface of Member I is irregular. It ~~is characterized~~ features ~~b~~ troughs and hummocks and has been characterized by Aigner as a reefal ~~fac~~ facies, over which Member II was deposited to gradually become more regularized

during deposition.

Between the highest point ~~monumented~~, G2, and the lowest point monumented on Member I sedimentary surface, G17, there is a distance of 108.55 ms and a difference in height of 10.33 ms. This gives a slope of 5° 26′ 10″. An average dip of 4° 23′ 41″ is obtained from the following data.

1. G2 – G17
   Distance 108.55 ms.
   Dif. hei. : 10: 33 ms.
   Slope 5° 26′ 10″

2. G20 – G17
   Distance : 19.95 ms.
   Dif. hei. : 1.45 ms.
   Slope : 4° 09′ 25″

3. G4 – G17
   Distance 79.80 ms.
   Dif. ~~height~~ : 4.61 ms.
   Slope 3° 18′ 22″

4. G8 – G17
   Distance 64.75 ms.
   Dif hei : 5.3 ms
   Slope 4° 40′ 46″

Average slope : 4° 23′ 41″
G2 – G17 (truest dip?) : 5° 26′ 10″

Because of ~~the~~ ~~its~~ the irregularity of this surface, it was more difficult to obtain a good average perpendicular to ~~the~~ its interpolated contour lines – or the bearing of the true dip

of the Member I-II contact plane. The best possible perpendiculars were taken from the following contour intervals:

Contour line	Bearing of Perpendicular	Average Bearing
10.0	N 15° 16′ W	
13.0	N 9° 16′ W	
16.0	N 25° 16′ W	N 9° 52′ W
19.0	N 13° 46′ W	APP STRIKE
21.0	N 14° 14′ E	

The line from G2-G17, which gives ~~the~~ greatest dip has a bearing of: ~~N 44° 0 W~~ N 42° 46′ W

The bearing of the dip and ~~strike~~ strike obtained by averaging, and that of G2-G17 have both been plotted on the general map. The great difference between the bearing of the average dip and the greatest ~~obser~~ measured dip (G2-G17) is due to the irregularities of the Member I-II contact plane. The ~~aspect~~ attitude of Member I beyond the immediate Sphinx ~~d~~ precinct has yet to be resolved.

It has been generally concluded that the dip of the Mokkatam Formation at Giza is from NW to SE. Said (   ) thought the angle of dip to be about 12°; Gauri, on the basis of the Dip measured in Member II (Bed 3i) at the Sphinx considered the general dip to be between 5°-6°; Strougal and Fawzi doubted it was this great and saw the dip as closer to 3° - 4°. The general ~~direction~~ trend of the dip direction is NW-SE, but the contours of Member I-II contact begin, in the upper NW corner of the Sphinx amphitheater, to trend more N-S.

in their dip direction (perpendicular to contour line). In fact a perpendicular (dip direction) ~~—~~ trending NE-SW was obtained from contour line 21 on the reconstructed Member I-II Contact plane. It has been generally agreed (Gauri, Aigner, Strougal, Fowzi) that the prominent bedrock outcropping running E-W parallel to ~~the~~ and N of the modern road (which has been cut as a vertical ledge face of rock-cut tombs) is Member I. Yet from the natural sedimentary surface of Member I just beside the immediate Sphinx ditch, it is obvious that the Member I outcrop further north rises considerably even to the NE of the Sphinx before it ~~grows~~ falls away to the valley floor. This rise is in the direction of the <u>strike</u> of the dip obtained from points G2-G17 in the Sphinx amphitheater.

In regards to the rise of Member I north-northeast of the Sphinx ditch, two other sequences of points are pertinent. Aigner, in the 1981 season, identified the Member I-II contact in the "Water Shaft" sunk through the Second Pyramid Causeway about 190 ms west of the Sphinx ditch, (G28) and in Campbell's Tomb shaft about 70 ms west of the Sphinx ditch. (G29). Elevations taken on the Member I-II contact at these points give 26.65 ms and 21.165 ms respectively. Lehner put a point (G25) at the contact between a residue of Member II marly bedrock and the Member I surface on top of the high ledge north of the Sphinx amphitheater and the modern road. The elevation of G25 is 24.44^5. Between G28 and G25 there is a loss in height of 2.20^5 ms from SW → NE. Yet between G25 and G2 there is a loss in height, <u>in the opposite direction</u>, of 3.78^5 ms. Yet all these 4 points ~~—~~ are ~~—~~ nearly aligned and their ~~—~~ approximate alignment nearly corresponds to the <u>strike</u> of the

averaged Member I-II Contact plane dip.

The second sequence of points aligns more to the direction of the Member I-II Contact plane dip as given by G2-G17. A low bedrock trough filled w/ yellow marly limestone immediately before the east center facade of the Sphinx Temple was seen by Aigner as a residue of the bottom marly bed (2a) of Member II in a characteristic trough of Member I.* A point set at this contact ~~was~~ is G30 with an elevation of 7.35 ms. Another point was set on the higher terrace, to the N of G30, the surface of which is thought to retain the near-sedimentary surface of Member I; this is G31 w/ an elevation of 12.135 ms.

* Left from cutting of lower terrace.

G30 and G31 lie w/ respect to G25 on a NW-SE alignment ~~about~~ ~~parcel~~ which has a ~~bea~~ bearing close to that of the Member I surface dip obtained from G2-G17.

G30 - G25		G31 - G25	
Distance	101 ms.	Distance	77 ms.
Dif. Height	17.095 ms	Dif. Height	12.31 ms
Slope	9° 36′ 24″	Slope	9° 04′ 58″
Bearing	~~N32°W~~ N30° 46′ W	Bearing	N39° 31′ W

44
30
14

44
39
5

Although the bearing of the line between these points is 5° - 14° further toward east than the G2-G17 dip (greatest dip in Sphinx ditch) for Member I-II contact, the dip given by these points is 4-5° greater than that given by G2-G17. ~~Clearly~~, Clearly Member I does not conform to the more regular dip and bearing of dip in

Member II.

4. PROBLEMS

The survey data presented here was gathered to help ~~elar~~ resolve 2 stratigraphic problems: 1. the correlation between the limestone exposures in the ~~–~~ Central Field to the SW of the Sphinx w/ the Member II - III sequence in the Sphinx ditch; 2. the correlation between limestone exposures to the N-NW of the Sphinx and east of the Great Pyramid to the Member I - II III sequence in the Sphinx ditch.

4.1 Assumptions

~~It was assumed that if a standard reference dip and its bearing could be established for Members I and II in the Sphinx ditch, the same geological units (individual beds) in Member II for example would have the same (nearly the) (vertical angle of) dip as the reference dip if they were on the or in the Sphinx ditch if the point on that unit was~~

It was assumed that a standard reference dip (vertical angle of slope) and its bearing (horizontal ~~angle~~ direction of dip) could be established for given units in the Sphinx ditch. It was desired to know if given units outside the Sphinx ditch (to SW and NW) were the same ~~units~~ as given units inside the Sphinx ditch. These units could ~~not~~ often not be traced ~~by direct~~ by direct observation because of cultural denudation (quarrying) and/or obstruction (tombs, debris etc.). If selected points on the outside unidentified unit ~~aligned w/ points on a given unit~~ made an alignment w/ points on a given known unit in the Sphinx area which was close to the true bearing of that units dip, and ~~[illegible]~~

~~was assumed that the two points would be of same unit~~, if the ~~slope~~ angle of slope between these points was close to the vertical angle of slope of the reference dip, it was likely that the ~~t~~ unidentified unit was the same as that in the Sphinx ditch. The more the bearing of a line between ~~a known (Sphinx ditch) unit and a point in the same unit outside~~ two points in the same unit deviated from the true bearing of the reference dip, the less would be the angle of dip between the two points. If two points in the same unit were approximately aligned perpendicular to the dip, or on the strike, ~~their angle of~~ the angle of slope between them would approach zero, they would be at or nearly at the same elevation.

4.2. SPHINX AND CENTRAL FIELD SEQUENCES

At the beginning of his participation in the 1981 season, Aigner thought that limestone beds equivalent to Member III at the Sphinx were preserved in the outcrops immediately north of the Kent Kawes monument at the far south edge of the Central Field. He thought, further, that the section exposed by the vertical quarry cut through this outcrop (particularly at his log 8 = Geo. pt. 24) was equivalent to the sequence in the Sphinx statue and Sphinx ditch. The top of this ~~ou~~ outcrop (Geo pts. ~~2~~ 21, 24) looked to be about on strike bearing of the general NW – SE dip ~~plane~~ direction. Therefore, it seemed appropriate that a ~~pair~~ preliminary sighting of both the top of the Sphinx head, and the top of this outcrop, showed them to be at about the same absolute height.

Later, when Aigner and Lehner attempted to trace

individual beds from the Sphinx ditch, S side, and along bedrock exposures around the SE and S edges of the central Field, it appeared as though the beds exposed in "quarry cubes" around ~~Ket~~ Kent Kawes were much higher, or younger, in the ~~stratigraphic~~ stratification (although not at appreciably higher absolute heights). This seemed to conflict with the preliminary sighting w/ the surveyor's level, and the fact that the ~~bed~~ top of the outcrop near Kent Kawes was nearly on strike. Later Gauri and Lehner ~~walked~~ traced the beds by eye and it seemed Aigner's earlier conclusion was correct: the sequence exposed at or near Kent Kawes is equivalent to that of the Sphinx head and body (Members III, II).

If Aigners earlier conclusion is correct, a series of three to four salent thin yellow marly beds w/ concentrations of nummulites that first show in quarry cube 15 (mastaba of Kay), and which can be traced to Kent Kawes bedrock base, should be equivalent to the marly bed(s) passing through the neck of the Sphinx. (Beds 8b - 8d) In March 1982, Lehner marked two points at the base of this series of thin marly beds on ~~an~~ a NE-SW alignment w/ the head of the Sphinx — or about ~~what the strike was~~ on the expected strike. — ~~and~~ took their elevations and mapped ~~them~~ their position. G23 is at the SE corner of Quarry Cube 15 (Mastaba of ~~K~~ Kay) and G24 at the vertical section and outcrop just NE of the NE corner of Kent Kawes (Hassan's mastaba of Thesty). These points were then tied to a point (G32) at the base of the Sphinx neck behind the head, precisely at the bottom of Bed 8b. (marly layer in neck).

(over)

G32 - G23		G32 - G24	
Distance:	~~251~~ 194.5 ms.	Distance	251 ms
Dif hei:	1.115 ms.	Dif hei:	.495 ms
G32 higher than G23		G24 higher than G32	
Slope	0° 19' 42"	Slope	0° 06' 46"
Bearing	S36° 14' W	Bearing	S45° 14' W

STRIKE G1-G16 ~~S[illegible]°50~~ S45° 30'W
(Member II) Averaged S59° 50'W

The bearing of both G23, and G24 ~~f~~ with respect to G32 falls very close to strike of Member II ~~as~~ accd. ~~taken from dip~~ to the dip construed from points in the Sphinx ditch. In both cases the angle of slope is close to zero. It is very probable, on this basis, that the thin yellow nummulitic marly bands at points G23 and G24 represent the same stratigraphic units as the marly ~~band~~ beds in the neck of the Sphinx ~~and~~ Therefore, Aigner's earlier hypothesis is ~~[illegible]~~ born out: viz, the sequence exposed at and near Kent Kowes represents that given by the bedrock core of the Sphinx statue.

Predictably, more of the sequence is left near Kent Kowes than in the Sphinx (where some was cut away to form the ~~statue~~ head). The top of the outcrop at point G24 (Aigner's log 8) has an elevation of 31.23 ms. The highest point in this general outcrop, G21, ~~just n~~ immediately north of the Kent Kowes monument, has an elevation of 34.275. This compares to an elevation of little more than 30.5 for the top of the Sphinx head.

G22 is located at the top of quarry cube 11, Aigner's log 7. In the vertical cut forming the

east face of this cube, the shows a thick orangish-yellow marly ~~band~~ bed. This appears much like Bed G9 in the Sphinx core. To test for this equivalence, the elevation of the top of this bed in ~~⊖~~ at G22 was taken and compared w/ a point at the top of Bed G9 in the ~~SE~~ S shoulder of the Sphinx, G33.

<u>G33 - G22</u>

DISTANCE 152.50 ms.

Dif. hei 4.175 ms

G33 higher than G22

Slope 1° 34' 05"

Bearing ~~20° 27~~ S27° 44' W

4.3 SPHINX AND EAST FIELD SEQUENCES

During the 1981 season, Aigner traced Member I from the Sphinx ditch to the outcrop NE of the Sphinx, and along the edge of the escarpment bordering the modern village as far as the NE corner of the rock shelf extending east of the Great Pyramid. ~~B~~ However, ~~it was more difficult~~ the Member I-II-III sequence was not so clear in the levelled bedrock exposed closer to the Pyramid, or between it and the Eastern Cemetery.

The large boat pit cut out of the bedrock parallel to the east side of the Great Pyramid offered a vertical section through the bedding at this point. The sides of this ~~p~~ boat pit show, toward the top and dipping generally N to S, a series of thin marly beds w/ concentrations of large nummulites. A ~~point~~ point, G26, was monumented exactly at the base of these marly beds in the east side of the boat pit. Its position and elevation were surveyed in order to ascertain the dip and bearing with respect to points monumented on the Member I-II contact

down in the Sphinx precinct. This was to follow through on a hypothesis, put forward by Aigner, that these marly beds marked the Member I-II contact east of the Great Pyramid.

In March 1982 Lehner observed, from the top of the Great Pyramid, two salient discontinuities, or "overlaps" on the exposed, culturally levelled bedrock floor of the area just east of the Pyramid. The first corresponded to the thin marly beds exposed in section in the side of the boat pit. The second ~~[illegible]~~ runs as a ~~thin~~ line further north and can be seen mainly about 10 ms north of the other open boat pit cut parallel to the causeway of the Great Pyramid. A hunch was formed that the first line of overlapping rock strata is the contact between Member III and II — in which case the thin nummulitic marly beds showing in the boat pit would correspond to those in the Central Field at QC 15/623, at 624, ~~and~~ in the base of Kent-Kawes, and the neck of the Sphinx; while the more northern line of overlapping strata corresponded to the contact between Members II - III.

A point, 627, was monumented at the contact between the two overlapping strata ~~forming the northern of the two lines~~ to the north. The position and elevation of this point was surveyed. This was to test Lehner's hunch that this "overlap" was the contact between Member I - II in the East Field.

The following relationships bear on Lehner's hunch that the series of thin nummulitic marly bands of 626 (boat pit) are equivalent ~~to those in the~~ those of 632 (the neck of the Sphinx), and therefore to those at 623, 624 and in the Kent Kawes monument:

G32 - G26 (Sphinx Neck - Boat pit marly beds)

Distance : 440.5 ms.

Dif. hei : 22.8748 ms.

Slope : 2° 58' 21'

~~Dom~~ G26 higher than G32

Bearing N24° 46' W

G23 - G26

Distance : 561 ms

Dif hei : 23.9898 ms

G26 higher than G23

Slope : 2° 26' 55"

Bearing : N 9° 44' W

G24 - G26

Distance : 575 ms

Dif. hei : 22.3798 ms

G26 higher than G24

Slope : 2° 13' 44"

Bearing : N 3° 14' W

Member II	Dip at Sphinx	Bearing Dip Direction
Average	5° 06' 08"	N 30° 10' W
G1-G16	5° 55' 44"	N 44° 30' W

Assuming that the dip of Member II in the Sphinx ditch would be that of Member II over the whole Giza "plateau", and/or that it would be the same as the dip ~~b~~ of the contact plane between Members II and III, the above seems to allow that the marly thin beds at G32 (Sphinx Neck) and G26 (boat pit) could be ~~are~~ equivalent, or the same sedimentary unit. ~~The~~ The slope between G32-G26 is about half the Member II dip at the Sphinx ditch, while

The bearing of these two points is about half that between points G1 - G16 ~~in Sphinx ditch~~ which gave the most pronounced dip in the Sphinx ditch. In the other two relations, G23 - G26 and G24 - G26, the bearing is increasingly away from the dip direction, and the dip slope is correspondingly less.

Concerning Aigner's hypothesis, that the marly beds in the E Field boat pit may mark the Member I - II contact, the following relations ~~are pertinent~~: between points in the Member I - II contact in the Sphinx precinct and G26, are pertinent:

G2 - G26
Distance: 361.5 ms.
Dif. hei: 25.2848 ms
Slope: 4°
Bearing ~~N22° 30'W~~
N24° 14'W

G8 - G26
Distance: 400 ms
Dif. hei: 30.3148 ms
Slope: 4° 20' 02"
Bearing: ~~N 28° 30'W~~
N30° 14'W

G25 - G26
Distance: 387 ms
Dif. hei: 21.4998 ms
Slope: 3° 10' 47"
Bearing: ~~N 36° 0'W~~
N37° 14'W

G30 - G26
Distance: 488 ms.
Dif. hei: 39.5948 ms.
Slope: 4° 38' 19"
Bearing ~~N35° 0'W~~
N36° 14'W

G31 - G26
Distance: 464 ms
Dif hei: 33.8098 ms.
Slope: 4° 10' 0"
Bearing: N32° 14'W

Member I-II Contact Dip at Sphinx		Bearing Dip Direction
Average	4° 23′ 41″	N 9° 52′ W
G2-G17	5° 26′ 10″	~~N 44° 0′ W~~ N42° 46′W

The slope between all the above points on the Member I-II Contact plane ~~at~~ in the Sphinx precinct and G26, the thin marly nummulitic beds in the boat pit, is very close to the averaged dip for Member I-II contact plane at the Sphinx. The bearings of these points to G26 range from 6° to 20° less than that of the Member I-II contact dip direction taken from G2-G17, the greatest dip ~~observed~~ measured at the Sphinx. If the latter is the true dip ~~direction and~~ (more true than the averaged dip) it is noteworthy that while the bearings of the above points with respect to G26 are 6° to 20° less than that of G2-G17, the slopes are correspondingly 1° to 2° less.

Thus the data may be more ~~suppportive~~ supportive of Aigner's hypothesis, viz. the marly units ~~•~~ in the boat pit of the E field (G26) do represent the ~~···~~ bottom of Member II, G26 being on the Member I-II contact plane. A problem in using this survey data to support Aigner's hypothesis, or Lehner's hunch, is the wide range shown in the dip direction or bearing ~~taken from those~~ of the Member I-II contact plane at the Sphinx — as taken from the interpolated contours. Given the apparent extreme irregularity of that plane, how may one be sure two points are on the dip direction or bearing?

For the sake of completeness, the survey data pertinent to the second part of Lehner's hunch — that the more northern discontinuity (G27) in the E field is the Member I-II contact — is given below.

G2 - G27

Distance : 431 ms.

Dif. hei : 26.055 ms.

Slope : 3° 27′ 34″

Bearing : N13° 44′W

G8 - G27

Distance : 461.75 ms.

D.f. hei : 31.085 ms

Slope : 3° 51′ 04″

Bearing : N ~~18° 30′~~ 19° 44′ W

G25 - G27

Distance : 439.75 ms

Dif. hei : 22.27 ms.

Slope : 2° 53′ 56″

Bearing : N 25° 29′ W

G30 - G27

Distance : 540 ms

Dif. hei : 39.365 ms.

Slope : 4° 10′ 09″

Bearing : N 26° 44″ W

G31 - G27

Distance : 514 ms.

Dif. hei : 34.58 ms

Slope : 3° 50′ 55″

Bearing : N27° 59′W

SPHINX PROJECT EXPENSE ACCOUNTS

SEASON 1981-82

August 1, 1981 - August 1, 1982

RECEIVED.

AUG. 13 1981	ECF check delivered by M. Lehner to ARCE, NY	$ 3,000
SEPT 28, 1981	ECF	5,500
Nov. 19, 1981	ECF	2,000
DEC. 14, 1981	ECF	2,000
Jan. 22, 1982	ECF	2,000
FEB 22, 1982	ECF	3,000
MAR 29, 1982	ECF	2,000
APR. 21, 1982	ECF	2,000
MAY 28, 1982	ECF	3,500 *
JUNE 25 1982	ECF	2,000
SEPT 9, 1981	Franzheim	20,000
Nov. 17 1981	G. Hines	500
Dec. 14, 1981	Myerson	100
Jan. 24, 1982	Vinson & Elkins	750
Mar. 23 1982	J. M. Rains	75
Mar. 23 1982	R. H. Allen	675
Mar. 23 1982	Gulf Resources	675
Mar. 23, 1982	McLain J. Forman	375
May 18, 1982	Nessim D. Gaon	1,800
TOTAL		51,950

EXPENDED

I. ON-LOCATION ACCOUNTS OF M. LEHNER

~~A. PROJECT Personnel: Food and Lodging~~

~~Period~~ ~~LE~~

~~viii/81 – xi/81~~ ~~957.47~~

ADD.

C. Transportation

Period	LE	
22/iii – 28/iii	100.00	½ full time
29/iii – 4/iv	120.00	full time
5/iv – 11/iv	120.00	" "
12 — 18/iv	paid by T. Mitchell, office	
19/iv – 25/iv	" " " " "	
26/iv – 2/v	80.00	
3/v – 9/v	80.00	
10/v – 17/v	80.00	
18/v – 31/v	80.00	
	LE 660.00	
1/vi – 6/vi	80.00	
7/vi – 13/vi	80.00	
14/vi – 22/vi	80.00	
23/vi – 27/vi	80.00	
28/vi – 5/vii	80.00	
6/vii – 12/vii	80.00	
13/vii – 18/vii	80.00	
19/vii – 26/vii	80.00	
27/vii – 1/viii	80.00	
	LE 720.00	

ADD. I.

D. Equipment, Supplies, Copying, Services

Period	LE
23/iii – 1/vi/82	87.63
2/vi – 1/viii/82	400.69
TOTAL	488.32

B. Workers Pay

Period	LE
21/iii – 25/iii/82	285.00
27/iii – 5/iv/82	408.50
TOTAL	693.50

F. Visas and Work Permits

Period	
2/vi – 1/viii/82	109.15

LEHNER, Monthly Stipend	$ 12,000
Charges on Stipend	$ 120

ADD. II.

B. Transportation

Week	LE.
12 – 18/iv/82	80.00
19 – 25/iv/82	80.00

C. Miscellaneous

		LE
14/iv/82	"Economist for Sphinx article	2.20

~~ADD~~ III. Walker & Allen

Date		
13/x/81	K. Lal Gauri Preservation Study	14,000.00
~~4/xii/81~~		
18/xi/81	Reimbursed M. Jones for Isis Temple Expenses	41.00
12/xi/	NY Telephone (3 calls by Lehner in Aug.)	23.47
18/xi/81	Gauri ticket and expenses	1342.38
23/xii/81	Telex from Gauri to Cairo	11.68
4/i/82	to Balfour Beatty	2.00
4/ii/82	TSF to 81-82 Membership for ~~[illegible]~~ Francheim	500.00
4/ii/82	TSF to 81-82 membership for G. Hines	125.00
4/ii/82	TSF to 81-82 membership for M. Meyerson	25.00
13/vi	to D. Leary for photo. reproductions	750.00
TOTAL		16,850.53

LE 1.00 = $ 1.225
$ 1.00 = .819

ACCOUNT	ITEM	LE	$
I	A. Project Personnel	1702.58	2077.15
I.	B. Workers Pay	5249.50	6404.39
I.	C. Transportation	2440.00	2976.80
I.	D. Equipment Services	1223.49	1492.66
I.	E. Restaurants	120.62	147.16
I.	F. Visa, Permits	109.15	133.16
II.	A. Transportation	~~1220.00~~ 980.00	~~1488.14~~ 1195.6
II.	B. Miscellaneous	545.50	665.51
III	All Items		16,850.53
	Lehner Stipend		12,000.00
	Charges on stipend trans.		120.00
			44,062.96 ~~44,355.5~~

Deficit outstanding as of Aug. 1, 1981 — $ 1281.21
\+ 624.88

LE 624.88 = 762.35

1281.21
762.35
— $ 518.65

44,062.96
518.65
44,581.61

~~44 355~~

44078.8

45,845.59

TOTAL RECEIVED:	51,950.00
TOTAL SPENT	44,581.61
	7,368.39

Aug. - Sept 1982	1,500
U.S. Trip Travel Expenses	
September stipend	1,000
October stipend	1,200
TOTAL	3,700

7,368.39
3,700.00
3,668.39.

6,104.41

3700

EXCAVATIONS IN THE AREA OF THE GREAT SPHINX

A-LI disappears in Period ii

Dev. in Dyn. V

C-LXIII
C-LXVI
D-LXXVI

Hetep

A-LI bag-shaped pot
B-LV neckless shoulder jar

Degen. in Dyn V into splay-foot forms

farberrste

scheintür

Morsi Fayed
contemporary to walls still standing to E (mud limestone)

S Balk:
SW corner cement floor / Souvenirs sold
mud flooring }?
house foundations } mud debris
lime-mortar packing
brown moist soil (occupation of mud house)
mud foundation
↓
Clean tan sand w/ mud lenses ~~45~~ 50 cms
Grey Ashy soil 47 cms
↓
(4)

W Balk:
interrupted by house — laminated packed grey sand — limestone ~~frags~~ gravel 1m
X Newspaper 1925
↓
(4) Loose clean Sand limestone frags scattered, gravelly

N and W Balk surface of gebel pokes out

shwabti on gebel (4) Sand

(4a) lense 15.90 Many small bone frags
Brown sand, Sherd beads
2.5 m. into square
3 udjat eyes

15.10 Boulder
Crust of packed Sand, limestone ~~fr~~ gravel w 44 cm diam hole
Cavity underneath

60 cm. depth Bottom sand, larger limestone pieces
14.20 - Coin from base gebel slope
→ Large Gebel Boulder in S Balk 1x1m beside locus (4a) patch
On level (5) packed gravel

Boulder
(5)
Gray soft sand
Sand w/ gravel limestone — tomb opening

14.20 Vertical face of ledge exposed
~~along~~ at Sand, W side

4/22/78 Opening found

Large cavity filled w/ sand

4/24 ~~Another opening, to N (real entrance~~

Brown locus just below 1st opening

27/ Real door found to N in corner where gebel face runs to E, then to N again, Drum Roll

[Expansion to Gebel at top of Sq. Moving large boulder

3/v Skeleton outside tomb entrance, against ledge corner, face of which burnt black 80 cm above, down to skeleton,
- Small remains of red material — cloth, coffin?
Late burials dropped out

<u>1st Chamber</u> SW corner, rect enclosure of broken stones, some w/ relief — forming very late burial, frag. mentary human bones in limestone, sand debris inside enclosure. Stones rested on sand

(1 long one from leading hall entrance)

3 Openings in S wall only niches

9/v 3 sq. cuttings in floor 1st hall, N side
1. E-most only 20 cm deep — unfinished shaft
2. Middle — limestone rubble fill 50 cm. depth
3. W-most filled w/ dark sand

10/V. N10-E9 Extension laid out
Total Sq. 17 x 10 ms.

11/V Cleaning, end of hall Debris - same PW w/ painted bands as from N6-E13, N6-E15

3 Shafts, small niches or chambers to S from bottom of 2 W-most shafts 2 ms. down.

E-most showed dark sand, mortar, limest. frags sherds.

Mid Shaft Dk. br. sand all way down

Floor of niche, soft clay-like tan deposit no sherds, frags.

Human bones from debris at end of hall.

Bottom of 2 niches - frags of bones, disturbed burial

15/V Cleaning, expanded N of N11-E9 to within 3 ms of house

17/V - Burial room to S of hall (last to S) cleared, bedrock-cut coffer

New tomb in N10-E9 higher in gebel
1 m. below surface

Sq. Chamber
Small W. hall
Vertical shaft
} Sand filled

Slope of debris - description
O.K. N.K. Roman
First broke into by SKI clearing
Sanctuary side, and R1

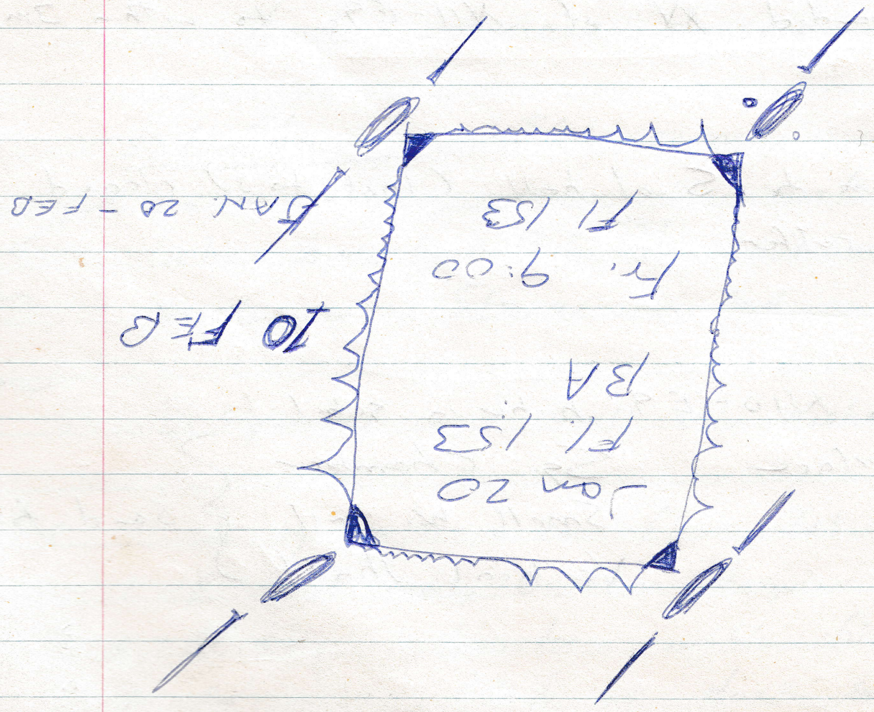
NS78 began clearing out sub. ledge removal channels
R2 - Quarry Work Abandoned
N limit - Sphinx Sanctuary

R9, R8, R6 (brief), R10 (mention), R2

R5-R6 O.K. cbs, deposit
Roman disturb
Early (N.K.?) disturb. → (4), (4a)
Ceramics N.K.

Trace (4) - (4a) to R3, R1 - scarab.

R16 - describe
Looks like R9 (3b)



p. 112

Walls bounding 30 steps – inscriptions recording repairs by Antonius, and Verus

Passage between steps & wall N-N ground plan (Entered by sub. steps.)

p. 113 { 2nd podium at 2nd flight of steps ~~—~~ inscription says was erected by Septimus Severus and another inscription on a stele was found erected in reigns of Marcus Antonious and Lucius Verus (B.M.) recorded walls restored 15th of Pachon in 6th year of reign of Antonius and Verus

Pl. H. tran. p. 119
Fig. 1

Mentions Septimus Severus
-- Domna mother of the camps, the pavement, having been destroyed, was restored

cf Birch p. ~~80~~ 32
8th year of joint reigns Severus, his wife, 2 sons, 29 Aug. AD 199-200 recording repair of pavement

It would be convenient to see 4-4a and excavation Time as a robbing of stone from the Sphinx Temple in the Second Int. Period, ~~or, of the dat~~ when state control broke down, or, if ~~the scarab type~~ chronology of private-name scarab types would allow it, even earlier in the ~~time~~ reign of Amenemhet I whose pyramid at Lisht contained reused O.K. blocks, some of which must come from Giza. However the ~~pottery from~~ few sherds from 4-4a in R5-R6 look decidedly ~~New~~ 18th Dynasty.

Fill from TNV excavations
- Fig. 14 examples
- Match w/ exc. from R13
- R13 bowl match w/ Amarna bowl
- Blue painted sherds from R13

R16

Problem of the Block
Describe deposit
Sherd evidence Fig 18
Compare to R9 (3b) etc.
Compare to Reisner const debris

INTERPRETATION

Chronology

POTTERY O.K 4th - mid early(?) 5th Dyn

Are the displaced core blocks being moved from & or to the 3rd course of NW corner S.T?
(Being moved off) Wouldn't have positioned blocks B-CD → to swing around corner, move direct E

When were they moved N.K. for All SE Corner? No
O.K.

What is relation of R16 to R9
Same deposit

cuttings C4-6
Excavation done in O.K to use cuttings? No Marl clay etc. partially cover C6, 7, 8
Prob. That IVs excavation of Sanctuary

Pottery — Early O.K
Compare Menkaure Mort Temple — Section sim. to R16 - granite casing taken out
Valley Temple
Khafre V.T - inside Mariette
Reads. Holscher

Sand

Because S.T. never finished prob. debris, marl clay, etc of construction planes which robbers used

Strange sublime statues, temples, pyramid, attacked (?) ... Just what it was caused quick reaction, sociologically
(Usually thought First Intermediate Period)
Khafre as door post in Kom Kom
While it may have been later, one caught an image of

GN II p. 62

i Cheops to Chefren
ii Late Chefren to end of Neferirkara Dyn. V.
iii Latter part Dyn. V.
iv. Dynasty VI

G-LII Bowl Cover: may be rep. by 2 small examples Dyn. VI tomb G2381Z.

Ceased before end of Dyn. IV:

D-XXXVI flat bottomed basin, recurved rim long tubular spot
D-LXXI large flat bottomed tub of mudware
E-XXI bowl table

Degenerated in Dyn. V and VI
A-IIb became more slender, smaller developed high neck - A-IIc

Introduced After period i, prob. most in Dyn. V
degenerate forms { C-LXIII round bottomed bowl w/ a ~~roll~~ molded rim Fig. 114
C-LXV " " " " " roll rim Fig. 115
C-XXXII "degerate forms" Fig 110 original form
p. 63 D-LXXVI new form bent-sided bowl w/ flat bottom Fig. 126

p. 80 CXXXa Bent sided bowls most frequent type fond in burial chambers of Dyn. V and VI Fig. 107

BLV figs. 62-63 } type commn in early
56 exs. Hetep tomb } mastabas - 1 ex. in Myc. V.T.
These and hog shaped pots A-LI continued in ~~w~~ mastabas & in Dyn. V developed into degenerate splay-foot forms which occurred

GN II p. 63

numbers in the burial chambers

Period i

D-LXXI mud ware tub

D-XXXVI flat bottomed basin w/ recurved rim, tubular spout.

A II b - large wine jars

Period ii

No ~~D~~ D-LXXI

D-XXXVI

Increased use of C-XXX (bent sided bowls) (Figs 107-109)

" " " round bottomed bowls CXXXII (bowls w/ recurved rim) (Fig. 110)

~~A~~ A-LI disappears

B-LV degenerates (neckless shoulder jar)

B-LVI " (collar jars)

B-LVIII (belted barrel jars)

Period iii

Wine jars change from A-IIb to AII-c (large jars).

Increased use of well-formed bowls type C-XXXII (recurved rim)

and degenerate forms w/ rudimentary or flaring recurved rim

Use of C-LXX flaring sided vessel w/ internal molding → (Fig 115)

GN II

p. 63 Period IV

Decrease in number of vessels used

C-LXIII in frequent use (bowl w/ flaring sides moulded edge)

Wine jar degenerates to A-IIc

Fig. 114

Not in early mastabas or Hetepheres I

---

p. 70 AIV ("Ordinary traditional offering jar")

— "apparently originally a beer jar"

— in gen. use in Dyn. III as part of grave equipment of even modest mastabas

— Few found in early mastabas of 3 W. Field nucleus cemeteries, + E Field nucleus.

* Many in M. V. T.

Masses in late mastabas of W. Field

Streets of E Field

Great number used in periodic chapel services

Discarded + used in filling of late mastabas

NS 78

IV

O.K. Rubble: all deposits: Rims, Bases

R9 (3a)	2	R6 (5)	3
R9 (3b)	13	R8 (5)	2
R10 (4)	5	R8 (5a)	16
R10 (4a)	2	R8 (5b)	0
R11A (4)	1		
R16	3		
5a (5a)	1		

TOTAL 48

"Traditional offering jar"

p. 70 GN Fig. 85

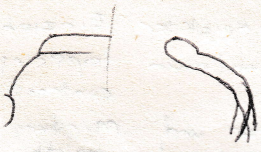
AIV

p. 54 Uskf ~~Fig~~

VIII, 64-67

72
16
8

VI

TOTAL
1 R9 (3b) (6) 

Neckless shoulder jar with band rim around mouth
GN. II p. 76f Fig. 62, 99

BLV p. 76 The type practically disappears before end of Dyn. IV. Small degenerate model of exaggerated splay foot continues Dyn. V–VI. ~~By that time degenerate model continued to occur in Dyn.~~ Rbr were finished in diff. ways

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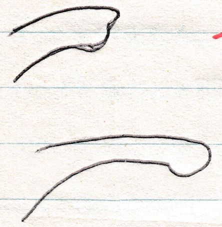


~~XVIII~~ ~~XII~~

D-XXXIXa Flaring flat-bottomed bowls
~~GN 66, 84,~~ Fig. 75 and 21
Uskf. p. 71 208–212 Type XLI

1 R9 (3b) (7) possibly – or jar stand
(see GN, Fig 75, No. 675/127 identical)
4 9, 10, 11 (poss), 12 (poss) (12 poss Uskf. XXXV)

1 R6 (5) (1) Poss. R9 (3b) (17)
1 R8 (6) (6)
1 R8 5a (30)
1 R8 5b (1)
9 TOTAL

Bread molds GN p. 58, Fig. 132 Type FXXV
Usk p. 77, 258–260 Type LIV
4 R9 (3a) (3, 5, 6, 7)
R9 (3b) (21, 23, 19, 20, 22, 30, 24, 25, 26, 27, 28, 29, 31, 32,
18 33, 34, 35, 36)
1 R10 (4) (2)
3 R8 (5) (10, 11, 12 ?)
9 R8 (5a) (14, 19, 20, 21, 22, 23, 24, 25, 26,)
1 R8 (5b) (4)
36 TOTAL

XVIII

{ schacf geknickter Einziehung zwischen
shaip bent down tapering between
contraction
Schulter und Mündung
shoulder and mouth

OFFERING TRAYS

GN Fig 132-133, p. 88
Uskf p. 77, 254-56

1 R6 (5) (6)
1 R8 (5a) (8)
1 R8 (5b) (3)
1 R9 (3a) (4)
6 R9 (3b) (37, 38, 39, 40, 41, 42,
1 R10 (4b) (3)

11 TOTAL

Round bottomed bowl

Bowl

Uskf p 57 Type XIV
GN II p 65, 81f. Fig. 110
Type CXXXII

VIII

1 R9 (3b) (1) exactly like no. 92 Uskf

} But could pass for Uskf XIII, 87 or 89 p. 57

IX

R9 (3b) (3)
(5)
R16 (4d) (6) poss.
R8 (5) (3a)
(3) poss.

Uskf p 58 Type XV 98-102
GN II p. 81f Fig 110-111
Type CXXXII
~~R16~~
R10 4b (1)
- R10 (4) poss

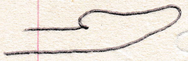
7 TOTAL (4 assuredly)

R9 (3b) (4)
R10 (4a) (1)
R16 (4c) (3) poss

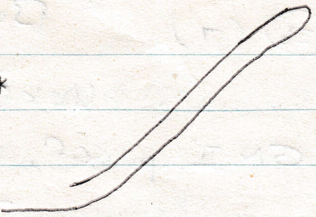
Uskf, p 56-7 Type XIII 83-91
(Most like 84 although ~~[illegible]~~ thicker section on ours)

TOTAL 3 (2 Assuredly

VII



R10 ④ (1)
R9 (3b) (11) poss*
(15) poss
(12) poss*
R8 (59) (28) poss.



GN II, p. 79, Fig 105
Type C-XXVII (Although these have roll rim); called "shallow round bottomed dish or bowl" while ours has rather flat base
USKF p. 68 Type XXXV, 186-188 (esp. no. 187) OR TYPE XL p. 70 202-205 w/ roll rim, ours like no. 207.

XI

5 TOTAL
1 Assuredly

R9 (3b) (2)

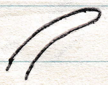
Most like G2357 36-4-18 (USKF Ab. 10 "6th Dyn")
USKF p 60 Type XVIII 115-120 (esp. 115 exact size 20 cm across)
GN Fig 116 and 36-5-18 (G2419 B), (G7101 I) 36-5-18
Type C-LXVI p. 82 "This type does not occur in the Hetep-heres tomb or in the early mastabas".

X

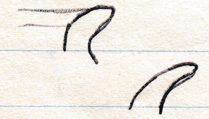
2

II

R9 (3b) (14)
R10 ④ (7) poss.
R2 ⑤



poss. USKF Type III 31-36 p. 52
More assuredly
Myc p. 217 Fig. 67,2 Type XV(2)



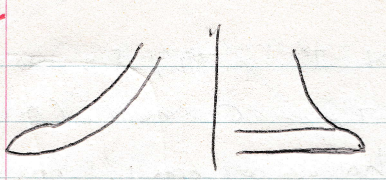
R8 ⑤ (3)* poss } Also listed XV, CXXXII

TOTAL 4
Only 1 likely

Poss. R9 (3b) (17)

XV

base of



R9 (3b) (7)

Bowl Stand

Uskf p. 75 Type IL 244

GN II p. 66f, 87, Fig. 76, 128, 130

Type E-XXI

p. 67 "Tall form of bowl ~~stand~~ table E-XXI and tall bowl stand were principally for chapel equipment"

V

Small Model jars

R10 (4a) (6)

R8 (5) (1)

TOTAL 2

Uskf p. 56 type XII, 76-82

GN II p. 77, Figs. 100 & 101

Types B-LVb & BLVI

Small model Dish

XIV

R16 (4d) (4)

Uskf p. 75 XLVIII

238-243

GN II p. 66, 86

Fig. 75, 127

Type D-LXXIXa and b

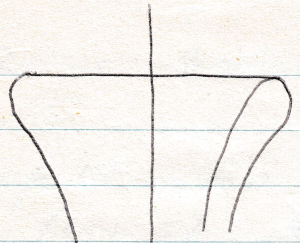
low form like ours

~~LII Uskf p.~~

Pxxxix ?

XIII

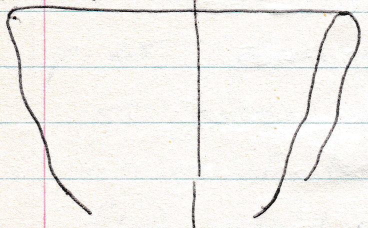
Usk p. 76 Type L
Nos. 245 - 246



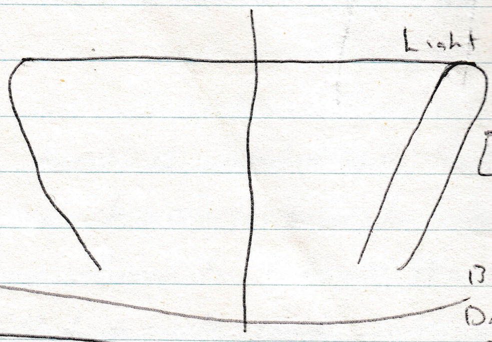
Fracture RBr.

R5 (5a) (2) Buff to Drab Surf.

Pxxxixb straight flaring sides — or Pxxxixc Footed cup



R8 (5a) (1) &
R8 (5b) (2)

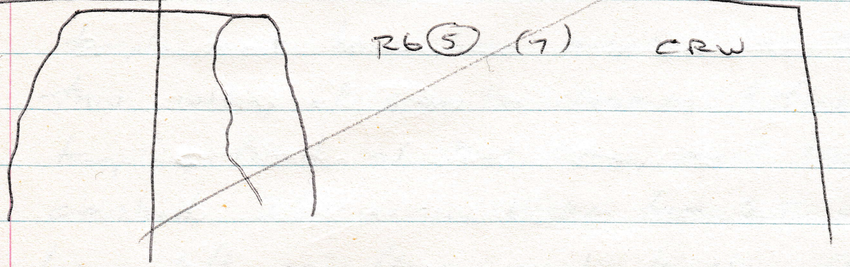


Light Tan outside
Light tan Fracture
with thick hard black

R8 (5a) (3)

Drab Ware

Black Fracture
Drab Buff to red, gray inside



R6 (5) (7) CRW

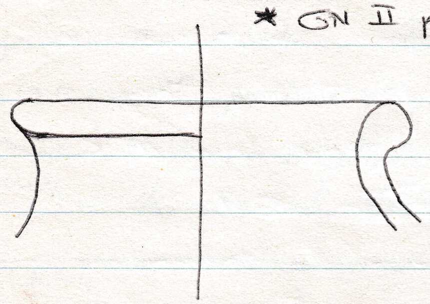
Pxxxixb Fig 121 GN II p. 84-85

Dxxxixc Fig 122 GN II
p. 84-85

14

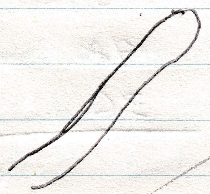
* GN II p. 73, fig. 93 "uncommon form widely distributed in time & locality"

I



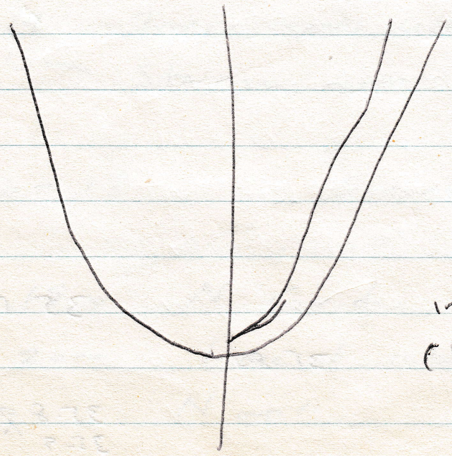
R8 (5) (2) Finely Levigated Rbr.W or RW

Uskf pp. 49-50, Type I*, 1-19, esp.
No. 7. ; or poss. pp. 52, Type IV, 37-38 *
(fine ware)



R5 (5) (4) RW matte Red wash inside
No. diam. estimate poss.

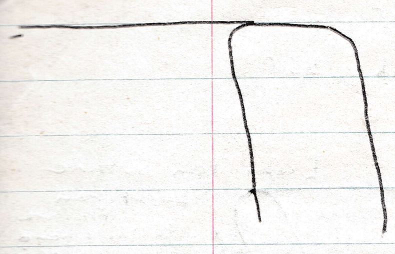
III



R9 (3b) (5c) "Tufi"

Uskf p. 52-3 Type V

Not distinguished from Nile Alluvial ware
in GN II, under types AIIb AIIc
(Figs 80, 81, 82 pp. 69-71)



R16 (4d) (1)

TOTAL GOOD DIAGNOSTIC TYPES	134	
CRW Offering Jars	48	35.825%
Bread Molds	36	26.90%
		62.725%

134

35.85

35.83

35.8%
35.9

Ricke: Robbing of Sphinx Temple

p. 13 Block from Tanis prob. taken from S.T. in time (Ant. 51) Ramses II

p. 25 Granite cornice pieces found S interior of S.T. not from S.T. cornice around inner court because granite sheathing in interior of temple broken away down to bedrock floor & alabaster floor ripped away. The rubbled-up-with-sand interior of the temple must have been emptied at the breaking away. At this robbing of granite cloaking & floor the interior of the temple, filled at that time, must have been completely emptied. If cornice blocks from S.T. court, they would have been left on floor inside temple. But they were found high up in the rubble. In same place were found smooth limestone plates of particular form. Lacau noted about finding of all these building parts, on back of photo (Tf 6a), the following: "The blocks of limestone and granite (cornice) coming from the

---

Schwaller
p. 20 only began granite casing on 2 entrance doors

Ricke
p. 12 Granite only later smoothed
p. 12 Colossal statues of King in S.T. court sockets (p. 25–26 reconst.)
M.T had 12 court pillars, S.T only 10
~~N and S. in S.T. larger~~
p. 14–15 Inner rooms use Stairway? Rejects.
Storage rooms "cult objects"

Figs. 9–10 (Pl. 3–4) seated statues of Kings with wide back pillar covered gap in granite sheathing of court pillars
p. 37–38 N–S court pillar pits wider Statues of part. form

p. 16–18 Second Building phase

p. 19–20 N Corridor used as a magazine
trace of introduction wood ceiling on top core blocks N wall

temple of granite (= V.T.) are now above the top of the walls (i.e. still in place) of the temple of the Sphinx They were ripped off the V.T at the moment that the neighboring temple (S.T.) already despoiled of its granite, was filled up w/ sand to the height of the surviving walls."

p. 25 Therefore 2 different periods of robbing

1. Took away all ___

2 ___

p. 31? Dating ~~and~~ Significance

On account of complete emptying out and plundering of temple in time of M.K. and on account of clearing of Sphinx Terrace by T IV, there are neither ~~finds~~ evidence ~~nor~~ from O.K. nor finds from M.K which can be related to Sphinx or S.T.

And since no priests of Harmachis mentioned mentioned in numberless graves of Giza Necrop. because temple was not completely built, therefore there can have been no cult there, and no priests installed.

p. 35 Temple not completely finished ---

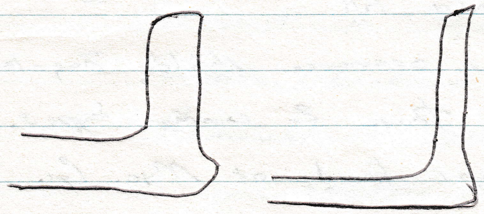
Since in our incomplete temple no cult inventory present and for reasons already given could probably never have been but ---

p. 38–39 Two chapels in use but temple not yet completed no cult of Harmachis in it, temple not yet given over to use

Uskf LII Runde Platten mit hohem rand p. 76

252-253

~~G~~ Myc p. 223, Fig. 71, 6-7 Type XXXVI



R9 (3a) (41)

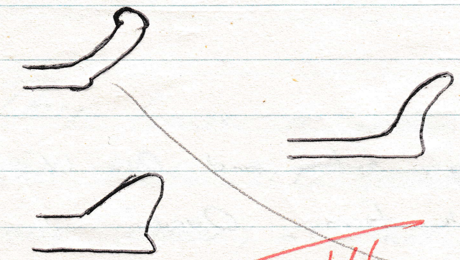
R9 (3b) (42)

~~XVI~~

Uskf. LIII Runde Platten mit niedrigem Rand

254-256

GN II p. 88 Fig. 132-133 Type F-XXVIa



R9 (3b) 37, 38, 39, 40, 41

R10 (4b) 3

R8 (5) 8

R8 (5a) 28 poss.

R8 (5b) 3

R6 (5) C

~~XVII~~

Offering jars most numerous – %
Bread Molds next % — Comp. Myc.
Reisner regards both as traditional Ceremonial vessels
Chapels – mastaba fill
Seems unlikely this occurence should negate domestic non-ceremonial function of these 2 common types.
Dif. w/ models – heaps found at Myc. Pyr. Temple, Chapels
Some question of if phase out by end of 5th Dyn.
— Incense bowl Cover.
Again question of this range of types would be found in purely const. deposit. Remains of temple service?
Ricke thinks N Corridor a storage area. More likely tossed out from interior temple. N. inner rooms also storage.

Date
Type (B-LV) VI disappears before end Dyn. IV.
Degenerate form Ours?

Our type VII (Userkaf XIII) 4th early 5th to mid
IX (XV) 5th Dyn.

Our type VIII
~~Our type XIV~~ (Userkaf XIV) Early 5th to Main use in 6th Dyn.

Our type XI (Userkaf XVIII) not found earlier than 6th Dyn. Graves at Giza

Our type ~~X~~IX matches exactly one from Hetepheres
But (GN II p. 97) a bowl cover (incense?) found in 6th Dyn. burial chamber Senezem-ib complex

MKR Mort Temple

- Neglect, plunder, decay in 5th Dynasty
- Reconst. in Dyn. 6th
- ~~Abandon~~ Abandoned w/in century end of Dyn. VI
- Removal of granite sheathing in Ramses II (?)

  Section Comparable to R16

MKR Valley Temple

Khafre Valley Temple

Interior — Mariette

Exterior — Hölscher

This leaves a wide chronological frame for the ~~destruction~~ robbing of the Khafre V.T. granite, but one which would exclude a 19th Dynasty plunder, at least at the facade of the V.T

Papyrus Salt 124
JEA late 20's - early 30's
Spreading legs in tomb
Note Orientalia
Baer mid 60's "a gram. const."
Shafik Allan Deir el Medineh

manchmal sometimes

Ucko, Tringham, Dimbleby Ac - Man

<u>Rev.</u> <u>Egypt.</u> 23: ~~15~~ 137-53

53
37

16

Some Observations on the Layout of the Khufu and Khafre pyramids.

Figures

1. Photo - holes E side Great Pyramid   2. NE Corner G.P.

3 ~~2~~. Layout Khafre Pyramid

4 ~~3~~. Sections layout system

5 ~~4~~. Perspective - Khufu pyramid layout

Intro   Accuracy of levelling orientation of Great Pyramid admired received much discussion.

- Chicken and egg problem - surveying true square oriented to north ~~requires~~ is most accurate on levelled surface, when levelled surface is to be prepared requires knowing the desired square - for levelling done not over whole area of square but only ~~at base~~ a narrow panel around base of pyramid
- Required is a reconstruction of the survey within what is known of the ancient Eg. tools, techniques.
- Should have left traces.

- Observations made during ARCE Sphinx Project
Preliminary

Borchardt   mrkht

Xerox Marag. on Borch. layout

TROUGH
TRENCH
LEVELLING
STEPS
ORIENTATION

Orientation
Transfer up.
Reservations
~~Care at other pp.~~
Not so diff. than survey - edfu
Care of other pyramids

p. 78 The possibility that it in this contrast distinction (difference) in the function of both (either) temple or also the disparity (difference, variety) their foresight (attention, care, precaution) — basis (fundamentals, rudiments)

draw, copy (mark of distinction)) is fundamental (on principle) secure (certain) not

out-locked up

Besides (on this point) / outside (out, forth) / lie however without doubt

also an expression temporal (chronological) distinction fur (before), that with

particular (specific) distinctness from the forms of the vessel (bowl, basin) — group

XIII to XX will demonstrate

On the unequivocable course of devopment sequence in the (which) this vessel-group (Gefäss) stands (situates), is already near (by, with) its proposal (subject matter) augment (increase) — specialty (division) hingewiesen war

---

About it (which) yet (besides, addition) wider (broader) to elucidate, is that here moreover in a particular classification (summary, compilation, list, synopsis)

obvious (evidently) made

p. 79 A corroboration and at the same time Establishing (Fixing) ergibt itself, provided (when) one purpose the findings of the Giea Graves

From the ~~preeminently~~ chiefly in the upper Temple was found Group XIII to XV is the first and last of these groups ~~before~~ for all for the Graves of the 4th and ~~before~~ previous early, to middle 5th Dyn. characteristic, ~~during~~ while the second first with the early 5th Dyn in Appearance

p. 80 trace and its principle distribution from to the beginning of 6th Dyn had

---

Just so, ~~merely except~~ only in the Giza Graves of the 6th Dyn. ~~evidence proof verification~~ example is also that for of the lower temple characteristic bowls of ~~Group~~ Groupe XXXIX, XXXIV and XXXIII, ~~during~~ in the course of again the Bowls of Group XXI, XXX, XXXI and XXXVI of the upper temple in Giza not later than from the end of 5th Dyn are attested

---

~~Similar~~ Analogous to stand it ~~furthermore~~ from now on with the

p. 81 vessel groupe XIII, XII, and XLVIII, ~~albeit~~ although here the statement which Reisner-Smith stated, is not entirely clear

1965

~~10~~ Marapioplio & Rinaldi 1966

~~11~~ Petrie 1883

~~6~~ Goyon 1967, ~~1977~~

~~9~~ Lauer 1947, 1974

~~1~~ Borchardt 1926, 1899

13 Rowe 1931

~~2~~ Carter 1916

~~3~~ Carter and Gardiner 1917

~~7~~ Haeny 1969

~~8~~ Holsher 1912

12 Reisner 1931

~~4~~ Clarke and Engelbach 1930

~~5~~ Edwards 1961

AIGNER ✓
C. ZIVIE ✓
NAT. GEO — Weaver ✓ / Canby ✓
Simpson ✓
Rosenman / Digital ✓
R. Naslund ✓
Margaret – Foundation / Corporation / Digital l.t. / Calma GE / April
Tim – Shoes / Leary Dec. / Digital l.t.
Kent Brown ✓
Dave Goodman
Lal Gauri – Billing Book ARCE / U. of Maryland colleague ✓
Dan Weil ✓
(Newsletter ?)
J. Jahoda
J. Allen
Drisco ✓
Doug Davy ✓
Mathew Mcaulay – send prospectus w/ budget

– ARCE Newsletter Article – mercury
– Nat. Geo proposal – Grants

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S. Jahoda
J. Allen
Ed Snider - Nat. Geo.

METROPOLITAN		250.	
YALE		150	*
MFA		200	
FIELD MUSEUM		150	
ND HUMANITIES	HONORARIUM	1200	
	PER DIEM	200	
BRIGHAM YOUNG		250	
SEATTLE ART MUSEUM		50	
U. OF WASHINGTON		200	*
EGYPT/AMERICAN SOCIETY		200	
UCLA		50	*
		2900	
CAYCE		400	
		3300	

YALE	150
UCLA	50
U. WASH.	200

II LECTURE ACCOUNT

RECEIVED: HONORARIA

✓ AIR FARE (w Note CFR Bill Paid out of ARCE SPHINX PROJECT ACCOUNT)

✓ GROUND TRANSPORTATION (taxi train, bus) 228.4

✓ FOOD AND LODGING 298.

(MISCELLANEOUS

TELEPHONE 167.16

I. SPHINX PROJECT EXPENSE ACCOUNT

✓ RECEIVED $1500

✓ AIR FARE CAIRO - SEATTLE, - NORFOLK

✓ PHOTOGRAPHIC

PRINTING GRAPHICS 2542.32

✓ TELEPHONE

✓ GROUND TRANSPORTATION - Rent Car

✓ FOOD + LODGING

TOTAL RECEIVED 1500

3300

4800.00

2542.32

2257.68

3300.00

2257.68

3,314.89

	837.33	
	2600.00	ECF
	400.00	Honoraria
	3837.33	
−	1200.00	Nov. Stipend
	2637.33	
−	2400.00	Dec, Jan. Stipend
	237.00	

Not Known

Account	Date	Item	LE
II c.	20i 82	"to Apis"	83.00
III A.	25ii 80	H. G. Otto via PEW	17.09
III B	21i 81	Columbia Un.	400.00
	12vi	P. Walker reim.	41.89
III C.	1x 82	P. Walker	18.12
	1x 82	" "	33.93
	1xi 82	" "	9.35
III D	8ix 83	P. Walker misc.	28.45

Nov. 82 STIPEND

— Cairo L.E. 1981 p. 2 line 38
21xii equiv. of $1006 given to MEL by JPA (@ LE 1.04 = $1)

cancels

→ Cairo $ 1981 p. 2 line 37
21xii cancel 22x (taken in pounds) (= 3/14)

→ Cairo $ 1981 22x $1000 to Cairo + Amex charge
(3/5)

= Cairo $ 1982 p. 3 line 14
6v JPA for MEL Nov stipend and charges
(3/30)